

1.2 Group Activity Worksheet

For use with Exercise 79 on page 104. Write the name of the group member assigned to each role.

Facilitator _____

Recorder _____

Other Group Members _____

A function f with domain all real numbers satisfies all of the following conditions:

- a. f is continuous for all x
- b. f is increasing on $(-\infty, 0]$ and on $[3, 5]$
- c. f is decreasing on $[0, 3]$ and on $[5, \infty)$
- d. $f(0) = f(5) = 2$
- e. $f(3) = 0$

1. How many roots does f have? Indicate the x -intercepts as accurately as you can.

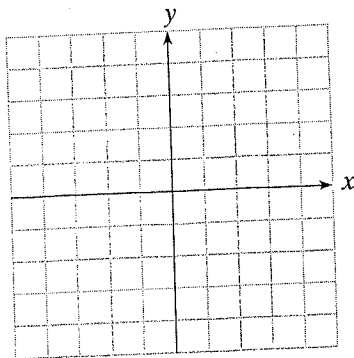
2. How many asymptotes does f have? Indicate the location of all the asymptotes as accurately as you can.

3. How many local maxima and local minima does f have? Identify all the extrema:

Local maxima _____

Local minima _____

4. Sketch (freehand) a graph of f .



Review Sheet

- ① Know the graphs of 10 functions and the description of the shape
- ② Properties

Domain, Range, Increasing/Decreasing,
Local/Relative Extrema, Absolute Extrema,
Vertical Asymptotes, Discontinuity (and type)
Even/Odd/Neither

Problems \rightarrow Find all the items above from #2
for the following functions:

① $y = x^2 - 1$

② $y = \frac{1}{x-2}$

③ $y = \sqrt{x-1}$

For 4-5, find continuity/discontinuity only

④ $y = \frac{3}{x+4}$

⑤ $y = \frac{x^2-1}{x-1}$